

FREEDMAN et al
Appl. No. 09/437,450
March 15, 2004

AMENDMENTS TO THE DRAWINGS

Attached are 43 sheets of formal drawings.

Attachment: Formal Drawings



Inventor: FREEDMAN et al
SN 09/437,450/Sheet 1 of 43
Atty. Dkt.: 1579-315

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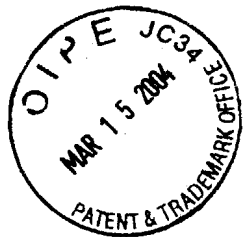
CdCl_2

+

-



Fig. 1



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Atty. Dkt.: 1579-315

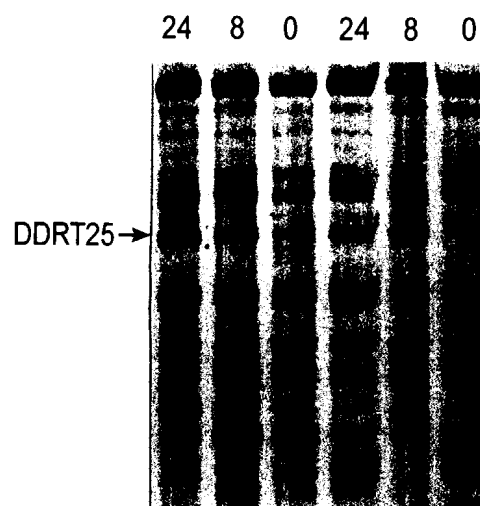


Fig. 2A

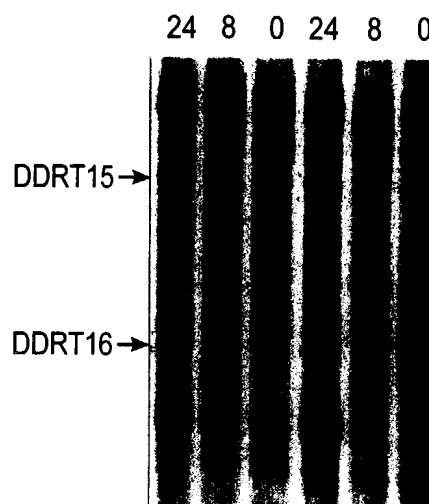


Fig. 2B



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Fig. 3A

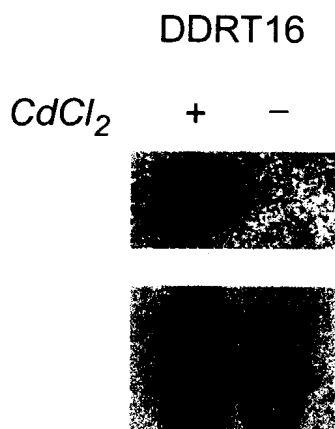
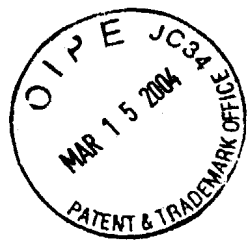


Fig. 3B



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Fig. 4A

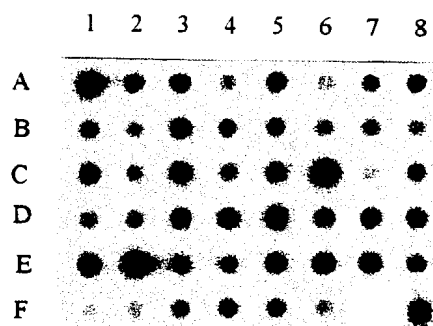


Fig. 4B

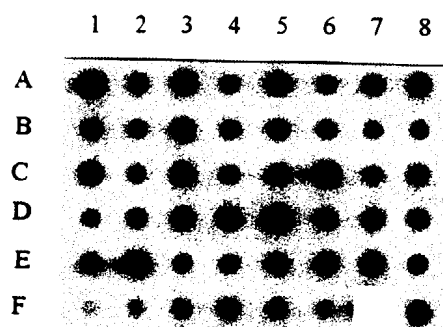
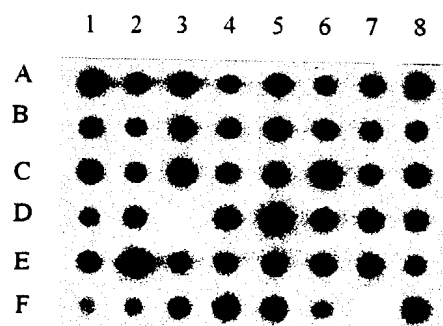


Fig. 4C





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Fig. 5A-1

LOCUS AF072438 284 bp mRNA EST 06-JUL-1998
DEFINITION AF072438 mRNA from cadmium-responsive gene *Caenorhabditis elegans*
cDNA clone DDRT21, mRNA sequence.
ACCESSION AF072438
NID g3288944
KEYWORDS EST.
SOURCE *Caenorhabditis elegans*.
ORGANISM *Caenorhabditis elegans*
Eukaryota; Metazoa; Nematoda; Secernentea; Rhabditia; Rhabditida;
Rhabditina; Rhabditoidea; Rhabditidae; Peloderinae; *Caenorhabditis*.
REFERENCE 1 (bases 1 to 284)
AUTHORS Freedman, J.H. and Liao, H.-C.
TITLE Cadmium-Regulated Genes from the Nematode *Caenorhabditis elegans*.
Identification and cloning of new cadmium-responsive genes by
differential display
JOURNAL Unpublished (1998)
COMMENT
Contact: Jonathan H. Freedman
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Email: jonf@duke.edu.

FEATURES Location/Qualifiers
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/strain="N2"
/db_xref="taxon:6239"
/clone="DDRT21"
/clone_lib="mRNA from cadmium-responsive gene"
/tissue_type="whole animal"
/dev_stage="mixed population"

BASE COUNT 88 a 61 c 54 g 81 t
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61  cgtaaacta cccaaggtac aacaacaaca tgtaagcac agaccatat ctattttgtg
121 cggaaggatg gcctctactg tagtaatcga caattggact ctatccacc ggatcactta
181 acctattttg atattaatat gcctgattgg ggatcacagg gttgcccga aatgtaatt
241 atgaactgaa tcgaaatgt attataaat tagttttat tggg
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LOCUS AF072437 214 bp mRNA EST 06-JUL-1998
DEFINITION AF072437 mRNA from cadmium-responsive gene *Caenorhabditis elegans*
cDNA clone VL8, mRNA sequence.
ACCESSION AF072437
NID g3288943
KEYWORDS EST.
SOURCE *Caenorhabditis elegans*.
ORGANISM *Caenorhabditis elegans*
Eukaryota; Metazoa; Nematoda; Secernentea; Rhabditia; Rhabditida;
Rhabditina; Rhabditoidea; Rhabditidae; Peloderinae; *Caenorhabditis*.
REFERENCE 1 (bases 1 to 214)
AUTHORS Freedman, J.H. and Liao, H.-C.
TITLE Cadmium-Regulated Genes from the Nematode *Caenorhabditis elegans*.
Identification and cloning of new cadmium-responsive genes by



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Fig. 5A-2

differential display
JOURNAL Unpublished (1998)
COMMENT
Contact: Jonathan H. Freedman
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FEATURES Location/Qualifiers
source 1..214
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/strain="N2"
/db_xref="taxon:6239"
/clone="VL8"
/clone_lib="mRNA from cadmium-responsive gene"
/tissue_type="whole animal"
/dev_stage="mixed population"

BASE COUNT 68 a 37 c 66 g 43 t

ORIGIN

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61 aggaggccag tgagaaaaaa tgctgtccag ctggatgtaa gggagactgc aagtgtgcaa
121 actgtcattg tgcagagcag aagcagtgcg agacaagacc catcaacacc agggaactgc
181 tgcggctcat taaaatgttt cagagttgaa tcta
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//

LOCUS AF072436 217 bp mRNA EST 06-JUL-1998
DEFINITION AF072436 mRNA from cadmium-responsive gene *Caenorhabditis elegans*
cDNA clone VL7, mRNA sequence.

ACCESSION AF072436

NID g3288942

KEYWORDS EST.

SOURCE *Caenorhabditis elegans*.

ORGANISM *Caenorhabditis elegans*

Eukaryota; Metazoa; Nematoda; Secernentea; Rhabditia; Rhabditida;
Rhabditina; Rhabditoidea; Rhabditidae; Peloderinae; *Caenorhabditis*.

REFERENCE 1 (bases 1 to 217)

AUTHORS Freedman, J.H. and Liao, H.-C.

TITLE Cadmium-Regulated Genes from the Nematode *Caenorhabditis elegans*.
Identification and cloning of new cadmium-responsive genes by
differential display

JOURNAL Unpublished (1998)

COMMENT

Contact: Jonathan H. Freedman
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Box 90328, Durham, NC 27708-0328, USA
Email: jonf@duke.edu.

FEATURES Location/Qualifiers
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/strain="N2"
/db_xref="taxon:6239"
/clone="VL7"
/clone_lib="mRNA from cadmium-responsive gene"



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Fig. 5A-3

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/tissue_type="whole animal"
/dev_stage="mixed population"
BASE COUNT 69 a 37 c 66 g 45 t
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61 gtgaggaggc cagttagaaa aaatgctgtc cagctggatg taaggagac tgcaagtgtg
121 caaactgtca ttgtcagag cagaagcagt gcgagacaag acctcatcaac accagggaac
181 tgctgcggct cattaaaatg tttagagtt gaactca
//

LOCUS AF072435 217 bp mRNA EST 06-JUL-1998
DEFINITION AF072435 mRNA from cadmium-responsive gene Caenorhabditis elegans
cDNA clone VL15, mRNA sequence.
ACCESSION AF072435
NID g3288941
KEYWORDS EST.
SOURCE Caenorhabditis elegans.
ORGANISM Caenorhabditis elegans
Eukaryota; Metazoa; Nematoda; Secernentea; Rhabditia; Rhabditida;
Rhabditina; Rhabditoidea; Rhabditidae; Peloderinae; Caenorhabditis.
REFERENCE 1 (bases 1 to 217)
AUTHORS Freedman, J.H. and Liao, H.-C.
TITLE Cadmium-Regulated Genes from the Nematode Caenorhabditis elegans.
Identification and cloning of new cadmium-responsive genes by
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Contact: Jonathan H. Freedman
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Email: jonf@duke.edu
FEATURES Location/Qualifiers
source 1..217
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/tissue_type="whole animal"
/dev_stage="mixed population"
BASE COUNT 69 a 37 c 66 g 45 t
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61 gtgaggaggc cagttagaaa aaatgctgtc cagctggatg taaggagac tgcaagtgtg
121 caaactgtca ttgtcagag cagaagcagt gcgagacaag acctcatcaac accagggaac
181 tgctgcggct cattaaaatg tttagagtt gaactca
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LOCUS AF072434 216 bp mRNA EST 06-JUL-1998
DEFINITION AF072434 mRNA from cadmium-responsive gene Caenorhabditis elegans
cDNA clone VL12, mRNA sequence.
ACCESSION AF072434
NID g3288940
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Fig. 5A-4

KEYWORDS EST.

SOURCE *Caenorhabditis elegans*.

ORGANISM *Caenorhabditis elegans*

Eukaryota; Metazoa; Nematoda; Secernentea; Rhabditia; Rhabditida;
Rhabditina; Rhabditoidea; Rhabditidae; Peloderinae; *Caenorhabditis*.

REFERENCE 1 (bases 1 to 216)

AUTHORS Freedman, J.H. and Liao, H.-C.

TITLE Cadmium-Regulated Genes from the Nematode *Caenorhabditis elegans*.
Identification and cloning of new cadmium-responsive genes by
differential display

JOURNAL Unpublished (1998)

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FEATURES Location/Qualifiers

source 1..216

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/strain="N2"

/db_xref="taxon:6239"

/clone="VL12"

/clone_lib="mRNA from cadmium-responsive gene"

/tissue_type="whole animal"

/dev_stage="mixed population"

BASE COUNT 69 a 37 c 66 g 44 t

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61 tgaggaggcc agtgagaaaa aatgctgtcc agctggatgt aaggagact gcaagtgtgc
121 aaactgtcat tgtgcagagc agaagcagtg cgagacaaga cccatcaaca ccagggaact
181 gctgcggctc attaaatgt ttcagagttg aatcta

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LOCUS AF071399 240 bp mRNA EST 01-JUL-1998

DEFINITION AF071399 mRNA from cadmium-responsive gene *Caenorhabditis elegans*
cDNA clone DDRT9A, mRNA sequence.

ACCESSION AF071399

NID g3265144

KEYWORDS EST.

SOURCE *Caenorhabditis elegans*.

ORGANISM *Caenorhabditis elegans*

Eukaryota; Metazoa; Nematoda; Secernentea; Rhabditia; Rhabditida;
Rhabditina; Rhabditoidea; Rhabditidae; Peloderinae; *Caenorhabditis*.

REFERENCE 1 (bases 1 to 240)

AUTHORS Freedman, J.H. and Liao, H.-C.

TITLE Cadmium-Regulated Genes from the Nematode *Caenorhabditis elegans*.
Identification and cloning of new cadmium-responsive genes by
differential display

JOURNAL Unpublished (1998)

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Fig. 5A-5

FEATURES Location/Qualifiers
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 /strain="N2"
 /db_xref="taxon:6239"
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 /clone_lib="mRNA from cadmium-responsive gene"
 /tissue_type="whole animal"
 /dev_stage="mixed population"

BASE COUNT 81 a 28 c 41 g 90 t

ORIGIN

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61 ggaagcctag aagagtgaag attttaaaaa atgtgaggaa ctggtttgt attcagaagc
121 atataaacgt tgtcttaatt tatatatgac gtctctatg aatatagcca aaatgatcga
181 ttttttaac ccaaaaatca aacatttttg gtatacgaa ctcgcctca cgagggttta
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LOCUS AF071398 217 bp mRNA EST 01-JUL-1998

DEFINITION AF071398 mRNA from cadmium-responsive gene *Caenorhabditis elegans*
 cDNA clone DDRT7, mRNA sequence.

ACCESSION AF071398

NID g3265143

KEYWORDS EST.

SOURCE *Caenorhabditis elegans*.

ORGANISM *Caenorhabditis elegans*

 Eukaryota; Metazoa; Nematoda; Secernentea; Rhabditia; Rhabditida;
 Rhabditina; Rhabditoidea; Rhabditidae; Peloderinae; *Caenorhabditis*.

REFERENCE 1 (bases 1 to 217)

AUTHORS Freedman, J.H. and Liao, H.-C.

TITLE Cadmium-Regulated Genes from the Nematode *Caenorhabditis elegans*.
 Identification and cloning of new cadmium-responsive genes by
 differential display

JOURNAL Unpublished (1998)

COMMENT

Contact: Jonathan H. Freedman
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FEATURES Location/Qualifiers
source 1..217
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 /strain="N2"
 /db_xref="taxon:6239"
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 /clone_lib="mRNA from cadmium-responsive gene"
 /tissue_type="whole animal"
 /dev_stage="mixed population"

BASE COUNT 64 a 38 c 42 g 73 t

ORIGIN

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61 aactgtctat atcattccgc aatcacatt cggtgttct cgaaggga ttccaaagt
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Fig. 5A-6

121 attggagtca tgtgaaagag ttcgtcatga agtttaccga aaggcatttc atagtgaatt
181 aaattgtcaa actagtagtc agatcaataa aattttc

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LOCUS AF071397 219 bp mRNA EST 01-JUL-1998
DEFINITION AF071397 mRNA from cadmium-responsive gene *Caenorhabditis elegans*
cDNA clone DDRT6, mRNA sequence.

ACCESSION AF071397

NID g3265142

KEYWORDS EST.

SOURCE *Caenorhabditis elegans*.

ORGANISM *Caenorhabditis elegans*

Eukaryota; Metazoa; Nematoda; Secernentea; Rhabditia; Rhabditida;
Rhabditina; Rhabditoidea; Rhabditidae; Peloderinae; *Caenorhabditis*.

REFERENCE 1 (bases 1 to 219)

AUTHORS Freedman, J.H. and Liao, H.-C.

TITLE Cadmium-Regulated Genes from the Nematode *Caenorhabditis elegans*.
Identification and cloning of new cadmium-responsive genes by
differential display

JOURNAL Unpublished (1998)

COMMENT

Contact: Jonathan H. Freedman
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FEATURES Location/Qualifiers

source 1..219

/organism="Caenorhabditis elegans"

/strain="N2"

/db_xref="taxon:6239"

/clone="DDRT6"

/clone_lib="mRNA from cadmium-responsive gene"

/tissue_type="whole animal"

/dev_stage="mixed population"

BASE COUNT 75 a 38 c 34 g 72 t

ORIGIN

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61 cccgtagcaa aaaatacat gtcgggaaaa tgagaaaaat ggtaataaaa ttttaaaaa
121 aagtatataa ttctccaac aagctactgc atgtccttgc actacaatct tctccgacgg
181 attccactct cgaatcgcca ttcgattct tcatgttgg

//

LOCUS AF071396 254 bp mRNA EST 01-JUL-1998

DEFINITION AF071396 mRNA from cadmium-responsive gene *Caenorhabditis elegans*
cDNA clone DDRT5, mRNA sequence.

ACCESSION AF071396

NID g3265141

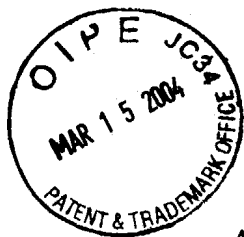
KEYWORDS EST.

SOURCE *Caenorhabditis elegans*.

ORGANISM *Caenorhabditis elegans*

Eukaryota; Metazoa; Nematoda; Secernentea; Rhabditia; Rhabditida;
Rhabditina; Rhabditoidea; Rhabditidae; Peloderinae; *Caenorhabditis*.

REFERENCE 1 (bases 1 to 254)



Inventor: FREEDMAN et al
SN 09/437,450/Sheet 11 of 43
Atty. Dkt.: 1579-315

Fig. 5A-7

AUTHORS Freedman, J.H. and Liao, H.-C.

TITLE Cadmium-Regulated Genes from the Nematode *Caenorhabditis elegans*.
Identification and cloning of new cadmium-responsive genes by
differential display

JOURNAL Unpublished (1998)

COMMENT

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Email: jonf@duke.edu.

FEATURES Location/Qualifiers

source 1..254
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/db_xref="taxon:6239"
/clone="DDRT5"
/clone_lib="mRNA from cadmium-responsive gene"
/tissue_type="whole animal"
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ORIGIN

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121 ttcgaaaaa atgtccataa aaagtgtga atgactttg ttcactcga agcatacata
181 cgatcgaaac ggagaaatcg atagatcgaa tcaggataag tggggatact gtattgtcgg
241 atgaaaacat agac
//

LOCUS AF071394 165 bp mRNA EST 01-JUL-1998

DEFINITION AF071394 mRNA from cadmium-responsive gene *Caenorhabditis elegans*
cDNA clone DDRT47, mRNA sequence.

ACCESSION AF071394

NID g3265139

KEYWORDS EST.

SOURCE *Caenorhabditis elegans*.

ORGANISM *Caenorhabditis elegans*

Eukaryota; Metazoa; Nematoda; Secernentea; Rhabditia; Rhabditida;
Rhabditina; Rhabditoidea; Rhabditidae; Peloderinae; *Caenorhabditis*.

REFERENCE 1 (bases 1 to 165)

AUTHORS Freedman, J.H. and Liao, H.-C.

TITLE Cadmium-Regulated Genes from the Nematode *Caenorhabditis elegans*.
Identification and cloning of new cadmium-responsive genes by
differential display

JOURNAL Unpublished (1998)

COMMENT

Contact: Jonathan H. Freedman
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FEATURES Location/Qualifiers

source 1..165
/organism="Caenorhabditis elegans"



Inventor: FREEDMAN et al
SN 09/437,450/Sheet 12 of 43
Atty. Dkt.: 1579-315

Fig. 5A-8

/strain="N2"
/db_xref="taxon:6239"
/clone="DDRT47"
/clone_lib="mRNA from cadmium-responsive gene"
/tissue_type="whole animal"
/dev_stage="mixed population"

BASE COUNT 38 a 37 c 20 g 70 t
ORIGIN

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121 acctgaaaac gaggttttt aatacttgat acattgtct tcac
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LOCUS AF071393 154 bp mRNA EST 01-JUL-1998
DEFINITION AF071393 mRNA from cadmium-responsive gene *Caenorhabditis elegans*
cDNA clone DDRT41, mRNA sequence.

ACCESSION AF071393

NID g3265138

KEYWORDS EST.

SOURCE *Caenorhabditis elegans*.

ORGANISM *Caenorhabditis elegans*

Eukaryota; Metazoa; Nematoda; Secernentea; Rhabditia; Rhabditida;
Rhabditina; Rhabditoidea; Rhabditidae; Peloderinae; *Caenorhabditis*.

REFERENCE 1 (bases 1 to 154)

AUTHORS Freedman, J.H. and Liao, H.-C.

TITLE Cadmium-Regulated Genes from the Nematode *Caenorhabditis elegans*.
Identification and cloning of new cadmium-responsive genes by
differential display

JOURNAL Unpublished (1998)

COMMENT

Contact: Jonathan H. Freedman
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FEATURES Location/Qualifiers

source 1..154
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/db_xref="taxon:6239"
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/clone_lib="mRNA from cadmium-responsive gene"
/tissue_type="whole animal"
/dev_stage="mixed population"

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ORIGIN

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61 cttacgtgg taagatcctg aacgtcgaaa agcaatggaa cataagatct acgaaaatga
121 ggagatcaaa aacatgttta cagcttgggt ccta
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LOCUS AF071392 264 bp mRNA EST 01-JUL-1998
DEFINITION AF071392 mRNA from cadmium-responsive gene *Caenorhabditis elegans*
cDNA clone DDRT40, mRNA sequence.



Inventor: FREEDMAN et al
SN 09/437,450/Sheet 13 of 43
Atty. Dkt.: 1579-315

Fig. 5A-9

ACCESSION AF071392
NID g3265137
KEYWORDS EST.
SOURCE Caenorhabditis elegans.
ORGANISM Caenorhabditis elegans
Eukaryota; Metazoa; Nematoda; Secernentea; Rhabditia; Rhabditida;
Rhabditina; Rhabditoidea; Rhabditidae; Peloderinae; Caenorhabditis.
REFERENCE 1 (bases 1 to 264)
AUTHORS Freedman, J.H. and Liao, H.-C.
TITLE Cadmium-Regulated Genes from the Nematode Caenorhabditis elegans.
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JOURNAL Unpublished (1998)
COMMENT

Contact: Jonathan H. Freedman
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Email: jonf@duke.edu.

FEATURES Location/Qualifiers
source 1..264
/organism="Caenorhabditis elegans"
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/dev_stage="mixed population"

BASE COUNT 90 a 47 c 59 g 68 t

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121 gagagtcctg gtcctcaaat taaattctac gaggcgatca aagaatacga gaaaatggag
181 acaccagatg agcgattaac aaaagcacga gaaattatc gatcatcata tacgggtgaa
241 ttccgtcgcg caatcgtcac actc
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LOCUS AF071391 187 bp mRNA EST 01-JUL-1998
DEFINITION AF071391 mRNA from cadmium-responsive gene Caenorhabditis elegans
cDNA clone DDRT4, mRNA sequence.
ACCESSION AF071391
NID g3265136
KEYWORDS EST.
SOURCE Caenorhabditis elegans.
ORGANISM Caenorhabditis elegans
Eukaryota; Metazoa; Nematoda; Secernentea; Rhabditia; Rhabditida;
Rhabditina; Rhabditoidea; Rhabditidae; Peloderinae; Caenorhabditis.
REFERENCE 1 (bases 1 to 187)
AUTHORS Freedman, J.H. and Liao, H.-C.
TITLE Cadmium-Regulated Genes from the Nematode Caenorhabditis elegans.
Identification and cloning of new cadmium-responsive genes by
differential display
JOURNAL Unpublished (1998)
COMMENT



Inventor: FREEDMAN et al
SN 09/437,450/Sheet 14 of 43
Atty. Dkt.: 1579-315

Fig. 5A-10

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Email: jonf@duke.edu.

FEATURES Location/Qualifiers
source 1..187
 /organism="Caenorhabditis elegans"
 /strain="N2"
 /db_xref="taxon:6239"
 /clone="DDRT4"
 /clone_lib="mRNA from cadmium-responsive gene"
 /tissue_type="whole animal"
 /dev_stage="mixed population"

BASE COUNT 57 a 22 c 41 g 67 t

ORIGIN

1 aaattttat taaaataaaa taaacatgtt ttgttgata ttatagcgtt aaagctgaaa
61 tgacaatgat tagaaaacca gcagagaata gagatgatgt tccttcgtt gttgtttcca
121 gtgaacactt gttgcggtgg agcccgatt tagcgagtgg tagttttga tgtgattggt
181 tccaatc

//

LOCUS AF071389 267 bp mRNA EST 01-JUL-1998
DEFINITION AF071389 mRNA from cadmium-responsive gene *Caenorhabditis elegans*
 cDNA clone DDRT37, mRNA sequence.

ACCESSION AF071389

NID g3265134

KEYWORDS EST.

SOURCE *Caenorhabditis elegans*.

ORGANISM *Caenorhabditis elegans*

Eukaryota; Metazoa; Nematoda; Secernentea; Rhabditia; Rhabditida;
Rhabditina; Rhabditoidea; Rhabditidae; Peloderinae; *Caenorhabditis*.

REFERENCE 1 (bases 1 to 267)

AUTHORS Freedman, J.H. and Liao, H.-C.

TITLE Cadmium-Regulated Genes from the Nematode *Caenorhabditis elegans*.
 Identification and cloning of new cadmium-responsive genes by
 differential display

JOURNAL Unpublished (1998)

COMMENT

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Email: jonf@duke.edu.

FEATURES Location/Qualifiers
source 1..267
 /organism="Caenorhabditis elegans"
 /strain="N2"
 /db_xref="taxon:6239"
 /clone="DDRT37"
 /clone_lib="mRNA from cadmium-responsive gene"
 /tissue_type="whole animal"
 /dev_stage="mixed population"

BASE COUNT 66 a 75 c 54 g 72 t



Inventor: FREEDMAN et al
SN 09/437,450/Sheet 15 of 43
Atty. Dkt.: 1579-315

Fig. 5A-11

ORIGIN

1 tggtagctcca cctacaagtt ctacaagttc tacgaggttg tctgatcga tccattccac
61 aaggctatcc gtcgtaaccc agacacccaa tggatcacca agcctagttc acaagcaccg
121 tgagcaaaga ggactcacct ctgctggacg caagttcgtg gactcggaaa gggattgctt
181 ttctctgcta cccgcggagg atcccaacac caaagttttt ccaccgccca accgataaat
241 ctgttattt tattttgtt tgggttt

//

LOCUS AF071388 292 bp mRNA EST 01-JUL-1998
DEFINITION AF071388 mRNA from cadmium-responsive gene *Caenorhabditis elegans*
cDNA clone DDRT36, mRNA sequence.

ACCESSION AF071388

NID g3265133

KEYWORDS EST.

SOURCE *Caenorhabditis elegans*.

ORGANISM *Caenorhabditis elegans*

Eukaryota; Metazoa; Nematoda; Secernentea; Rhabditia; Rhabditida;
Rhabditina; Rhabditoidea; Rhabditidae; Peloderinae; *Caenorhabditis*.

REFERENCE 1 (bases 1 to 292)

AUTHORS Freedman, J.H. and Liao, H.-C.

TITLE Cadmium-Regulated Genes from the Nematode *Caenorhabditis elegans*.
Identification and cloning of new cadmium-responsive genes by
differential display

JOURNAL Unpublished (1998)

COMMENT

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FEATURES Location/Qualifiers

source 1..292
/organism="*Caenorhabditis elegans*"
/strain="N2"
/db_xref="taxon:6239"
/clone="DDRT36"
/clone_lib="mRNA from cadmium-responsive gene"
/tissue_type="whole animal"
/dev_stage="mixed population"

BASE COUNT 73 a 57 c 51 g 111 t

ORIGIN

1 tttttttt ttcccaac ccttcacat aaaggcggaa aaccgattgt tgctgttact
61 tgtgtgtgc gtttatccc tgaggtatcc atattcgcgt tctcccaatc tctaaagata
121 tacctgaaaa cgagttgtcg tcgaaatact tgatacatgt tgtcttcacg ctggtgtatg
181 ttgttcgca aattctcat actagttatg ataggatttg aatgagctgg caccagtgaa
241 cttgaactc gaatttcaat atttcgtga tctgcatta agtgatgaat aa

//

LOCUS AF071387 314 bp mRNA EST 01-JUL-1998
DEFINITION AF071387 mRNA from cadmium-responsive gene *Caenorhabditis elegans*
cDNA clone DDRT35, mRNA sequence.

ACCESSION AF071387

NID g3265132

KEYWORDS EST.



Inventor: FREEDMAN et al
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Atty. Dkt.: 1579-315

Fig. 5A-12

SOURCE *Caenorhabditis elegans*.
ORGANISM *Caenorhabditis elegans*
Eukaryota; Metazoa; Nematoda; Secernentea; Rhabditia; Rhabditida;
Rhabditina; Rhabditoidea; Rhabditidae; Peloderinae; *Caenorhabditis*.
REFERENCE 1 (bases 1 to 314)
AUTHORS Freedman, J.H. and Liao, H.-C.
TITLE Cadmium-Regulated Genes from the Nematode *Caenorhabditis elegans*.
Identification and cloning of new cadmium-responsive genes by
differential display
JOURNAL Unpublished (1998)
COMMENT

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FEATURES Location/Qualifiers
source 1..314
/organism="Caenorhabditis elegans"
/strain="N2"
/db_xref="taxon:6239"
/clone="DDRT35"
/clone_lib="mRNA from cadmium-responsive gene"
/tissue_type="whole animal"
/dev_stage="mixed population"

BASE COUNT 86 a 65 c 56 g 107 t

ORIGIN

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1 tctgagctag gaggtccagg aggaacaac ggaggaggtg ctggaaatgg tggattcgac
61 gatttgatg attggctcg ccgttcgaa gaactgaaaa agattaagta atcatcaccc
121 gacgtccat tcctattaa ctattgtt cctccacc caattttt ttcacgtgc
181 ttttttga tcataaatga gacccccaaa aactagctgt ttctagtgc atacgttaa
241 accccttag tcattgatta tcattgata cctcattatc cgaaaaacct ttcgacattc
301 atcaactagg ttt
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//

LOCUS AF071386 189 bp mRNA EST 01-JUL-1998
DEFINITION AF071386 mRNA from cadmium-responsive gene *Caenorhabditis elegans*
cDNA clone DDRT34, mRNA sequence.

ACCESSION AF071386

NID g3265131

KEYWORDS EST.

SOURCE *Caenorhabditis elegans*.

ORGANISM *Caenorhabditis elegans*
Eukaryota; Metazoa; Nematoda; Secernentea; Rhabditia; Rhabditida;
Rhabditina; Rhabditoidea; Rhabditidae; Peloderinae; *Caenorhabditis*.

REFERENCE 1 (bases 1 to 189)

AUTHORS Freedman, J.H. and Liao, H.-C.

TITLE Cadmium-Regulated Genes from the Nematode *Caenorhabditis elegans*.
Identification and cloning of new cadmium-responsive genes by
differential display

JOURNAL Unpublished (1998)

COMMENT

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Inventor: FREEDMAN et al
SN 09/437,450/Sheet 17 of 43
Atty. Dkt.: 1579-315

Fig. 5A-13

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Email: jonf@duke.edu.

FEATURES Location/Qualifiers
source 1..189
 /organism="Caenorhabditis elegans"
 /strain="N2"
 /db_xref="taxon:6239"
 /clone="DDRT34"
 /clone_lib="mRNA from cadmium-responsive gene"
 /tissue_type="whole animal"
 /dev_stage="mixed population"

BASE COUNT 61 a 26 c 48 g 54 t
ORIGIN

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1 tctgagctag ggaccgaaat tcacaaatat ccaattgtta ctggatggg gggatgtgga
61 cgatttaatg gggacaagcc actgaagtgt atgttatttc attcgtaaa tatgaagatg
121 gaggagagtg aatggggatt ttgcttcttt tgcaaaatgg cctccctatg tacctgaaaa
181 aaaaaaaaaa
```

//

LOCUS AF071385 171 bp mRNA EST 01-JUL-1998
DEFINITION AF071385 mRNA from cadmium-responsive gene *Caenorhabditis elegans*
 cDNA clone DDRT33D, mRNA sequence.

ACCESSION AF071385

NID g3265130

KEYWORDS EST.

SOURCE *Caenorhabditis elegans*.

ORGANISM *Caenorhabditis elegans*

Eukaryota; Metazoa; Nematoda; Secernentea; Rhabditia; Rhabditida;
Rhabditina; Rhabditoidea; Rhabditidae; Peloderinae; *Caenorhabditis*.

REFERENCE 1 (bases 1 to 171)

AUTHORS Freedman, J.H. and Liao, H.-C.

TITLE Cadmium-Regulated Genes from the Nematode *Caenorhabditis elegans*.
 Identification and cloning of new cadmium-responsive genes by
 differential display

JOURNAL Unpublished (1998)

COMMENT

Contact: Jonathan H. Freedman
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FEATURES Location/Qualifiers
source 1..171
 /organism="Caenorhabditis elegans"
 /strain="N2"
 /db_xref="taxon:6239"
 /clone="DDRT33D"
 /clone_lib="mRNA from cadmium-responsive gene"
 /tissue_type="whole animal"
 /dev_stage="mixed population"

BASE COUNT 57 a 44 c 37 g 33 t
ORIGIN

```
1 tctgagctag gaaaggacgg agaagatgga gagaacggag ctgctggagc cgctggacca
```



Inventor: FREEDMAN et al
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Atty. Dkt.: 1579-315

Fig. 5A-14

61 aaggatctt gcgacctg cccaccacca cgcactcccc aggatattaa ttcacttctc
121 tctaatttta gtgaattca tctaataaa aagccgcccc aaaaaaaaaa a

//

LOCUS AF071383 289 bp mRNA EST 01-JUL-1998
DEFINITION AF071383 mRNA from cadmium-responsive gene *Caenorhabditis elegans*
cDNA clone DDRT30, mRNA sequence.

ACCESSION AF071383

NID g3265128

KEYWORDS EST.

SOURCE *Caenorhabditis elegans*.

ORGANISM *Caenorhabditis elegans*

Eukaryota; Metazoa; Nematoda; Secernentea; Rhabditia; Rhabditida;
Rhabditina; Rhabditoidea; Rhabditidae; Peloderinae; *Caenorhabditis*.

REFERENCE 1 (bases 1 to 289)

AUTHORS Freedman, J.H. and Liao, H.-C.

TITLE Cadmium-Regulated Genes from the Nematode *Caenorhabditis elegans*.
Identification and cloning of new cadmium-responsive genes by
differential display

JOURNAL Unpublished (1998)

COMMENT

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FEATURES Location/Qualifiers

source 1..289

/organism="Caenorhabditis elegans"

/strain="N2"

/db_xref="taxon:6239"

/clone="DDRT30"

/clone_lib="mRNA from cadmium-responsive gene"

/tissue_type="whole animal"

/dev_stage="mixed population"

BASE COUNT 68 a 64 c 63 g 94 t

ORIGIN

1 tttttttt ttgagcgag cgtttattat ttgagtcgag ctgggttga gtcgtcagct
61 gaacatgaag attgacaaag aagacgatca gcagcaacag atgcgcagag tcgcattctt
121 tgcggttgc gtctcaactg cagccgcat tcaagcatc gtgactctcc caatgatcta
181 ctcttactct tcaatcttc caatccatt tgatcattgg aaaccgagtt ctgtaaaact
241 gtgctcgtga tatgtggtgt cgaagttctc cacaagtcag gtgtaccct

//

LOCUS AF071382 162 bp mRNA EST 01-JUL-1998
DEFINITION AF071382 mRNA from cadmium-responsive gene *Caenorhabditis elegans*
cDNA clone DDRT3, mRNA sequence.

ACCESSION AF071382

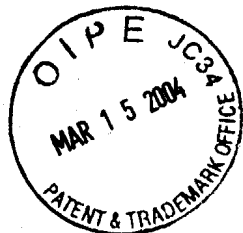
NID g3265127

KEYWORDS EST.

SOURCE *Caenorhabditis elegans*.

ORGANISM *Caenorhabditis elegans*

Eukaryota; Metazoa; Nematoda; Secernentea; Rhabditia; Rhabditida;
Rhabditina; Rhabditoidea; Rhabditidae; Peloderinae; *Caenorhabditis*.



Inventor: FREEDMAN et al
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Atty. Dkt.: 1579-315

Fig. 5A-15

REFERENCE 1 (bases 1 to 162)

AUTHORS Freedman, J.H. and Liao, H.-C.

TITLE Cadmium-Regulated Genes from the Nematode *Caenorhabditis elegans*.
Identification and cloning of new cadmium-responsive genes by
differential display

JOURNAL Unpublished (1998)

COMMENT

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FEATURES Location/Qualifiers

source 1..162
/organism="Caenorhabditis elegans"
/strain="N2"
/db_xref="taxon:6239"
/clone="DDRT3"
/clone_lib="mRNA from cadmium-responsive gene"
/tissue_type="whole animal"
/dev_stage="mixed population"

BASE COUNT 64 a 31 c 18 g 49 t

ORIGIN

1 ctccaccgca acaagtgtc acgtggaaac aacaacgaaa ggaacatcat ctctatctct
61 gctggtttc taatcattgt cattcagct ttaacgctat aatcaacaaa aacagtttat
121 ttatttttaa taaaaattta ttcgtgcaaa aaaaaaaaaa aa
//

LOCUS AF071381 140 bp mRNA EST 01-JUL-1998

DEFINITION AF071381 mRNA from cadmium-responsive gene *Caenorhabditis elegans*
cDNA clone DDRT29, mRNA sequence.

ACCESSION AF071381

NID g3265126

KEYWORDS EST.

SOURCE *Caenorhabditis elegans*.

ORGANISM *Caenorhabditis elegans*

Eukaryota; Metazoa; Nematoda; Secernentea; Rhabditia; Rhabditida;
Rhabditina; Rhabditoidea; Rhabditidae; Peloderinae; *Caenorhabditis*.

REFERENCE 1 (bases 1 to 140)

AUTHORS Freedman, J.H. and Liao, H.-C.

TITLE Cadmium-Regulated Genes from the Nematode *Caenorhabditis elegans*.
Identification and cloning of new cadmium-responsive genes by
differential display

JOURNAL Unpublished (1998)

COMMENT

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FEATURES Location/Qualifiers

source 1..140
/organism="Caenorhabditis elegans"
/strain="N2"



Inventor: FREEDMAN et al
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Atty. Dkt.: 1579-315

Fig. 5A-16

/db_xref="taxon:6239"
/clone="DDRT29"
/clone_lib="mRNA from cadmium-responsive gene"
/tissue_type="whole animal"
/dev_stage="mixed population"

BASE COUNT 52 a 25 c 29 g 34 t
ORIGIN

1 tagggcctgg ttgtgacaat gtgcactaaa atggggcatg aatacacca gcagagtca
61 ctaccctaaa gtgtacttat taagagtcaa ctgtgaagta tatgagacat ttcagttgcc
121 tgcccaaaaa aaaaaaaaaa
//

LOCUS AF071380 308 bp mRNA EST 01-JUL-1998
DEFINITION AF071380 mRNA from cadmium-responsive gene *Caenorhabditis elegans*
cDNA clone DDRT28, mRNA sequence.

ACCESSION AF071380

NID g3265125

KEYWORDS EST.

SOURCE *Caenorhabditis elegans*.

ORGANISM *Caenorhabditis elegans*

Eukaryota; Metazoa; Nematoda; Secernentea; Rhabditia; Rhabditida;
Rhabditina; Rhabditoidea; Rhabditidae; Peloderinae; *Caenorhabditis*.

REFERENCE 1 (bases 1 to 308)

AUTHORS Freedman, J.H. and Liao, H.-C.

TITLE Cadmium-Regulated Genes from the Nematode *Caenorhabditis elegans*.
Identification and cloning of new cadmium-responsive genes by
differential display

JOURNAL Unpublished (1998)

COMMENT

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FEATURES Location/Qualifiers

source 1..308
/organism="Caenorhabditis elegans"
/strain="N2"
/db_xref="taxon:6239"
/clone="DDRT28"
/clone_lib="mRNA from cadmium-responsive gene"
/tissue_type="whole animal"
/dev_stage="mixed population"

BASE COUNT 88 a 70 c 73 g 77 t

ORIGIN

1 tagttaggca caggatgtac gaggaattc tactattttc gggtctcacc acgaaatcac
61 aataaccggg atttttagt ggtcccgca cgttgacctt ctggcgcgtc aggcactccg
121 ccgcgacatt cgccgacacg cctacaatcc acgtgtcaat cgtcagattt gcggatcaat
181 aatggatgat aaaggtggaa atacgtatat ggatcatgtt caaaggcatc aagctgaaca
241 attcgaagag tgaatcggc gtcgacactt ttgatccaag accgtaagaa attgaaagc
301 tattggtg
//

LOCUS AF071379 238 bp mRNA EST 01-JUL-1998



Inventor: FREEDMAN et al
SN 09/437,450/Sheet 21 of 43
Atty. Dkt.: 1579-315

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Fig. 5A

DEFINITION AF071379 mRNA from cadmium-responsive gene *Caenorhabditis elegans*
cDNA clone DDRT26, mRNA sequence.

ACCESSION AF071379

NID g3265124

KEYWORDS EST.

SOURCE *Caenorhabditis elegans*.

ORGANISM *Caenorhabditis elegans*

Eukaryota; Metazoa; Nematoda; Secernentea; Rhabditia; Rhabditida;
Rhabditina; Rhabditoidea; Rhabditidae; Peloderinae; *Caenorhabditis*.

REFERENCE 1 (bases 1 to 238)

AUTHORS Freedman, J.H. and Liao, H.-C.

TITLE Cadmium-Regulated Genes from the Nematode *Caenorhabditis elegans*.
Identification and cloning of new cadmium-responsive genes by
differential display

JOURNAL Unpublished (1998)

COMMENT

Contact: Jonathan H. Freedman
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Email: jonf@duke.edu.

FEATURES Location/Qualifiers

source 1..238

/organism="Caenorhabditis elegans"

/strain="N2"

/db_xref="taxon:6239"

/clone="DDRT26"

/clone_lib="mRNA from cadmium-responsive gene"

/tissue_type="whole animal"

/dev_stage="mixed population"

BASE COUNT 74 a 43 c 44 g 77 t

ORIGIN

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1 tttttttt ttttgggag gaaatcacgg cttcggatgc aacagtcttc tctcaattgg
61 caactgtcta ttatccattc cgcaatcaca ttccggatgt tctcgaaaag gacttcccaa
121 agttattgga gtactgtgaa agagttcgtc atgaagtta cccaaaggac ttactatgt
181 gaattaaatt gtcaactag tagtcagatc aataaaatt tccgcgcgaa aaaaaaaaaa
//
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LOCUS AF071378 324 bp mRNA EST 01-JUL-1998

DEFINITION AF071378 mRNA from cadmium-responsive gene *Caenorhabditis elegans*
cDNA clone DDRT25A, mRNA sequence.

ACCESSION AF071378

NID g3265123

KEYWORDS EST.

SOURCE *Caenorhabditis elegans*.

ORGANISM *Caenorhabditis elegans*

Eukaryota; Metazoa; Nematoda; Secernentea; Rhabditia; Rhabditida;
Rhabditina; Rhabditoidea; Rhabditidae; Peloderinae; *Caenorhabditis*.

REFERENCE 1 (bases 1 to 324)

AUTHORS Freedman, J.H. and Liao, H.-C.

TITLE Cadmium-Regulated Genes from the Nematode *Caenorhabditis elegans*.
Identification and cloning of new cadmium-responsive genes by
differential display

JOURNAL Unpublished (1998)



Inventor: FREEDMAN et al
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Atty. Dkt.: 1579-315

Fig. 5A-
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Email: jonf@duke.edu.

FEATURES Location/Qualifiers

source 1..324
/organism="Caenorhabditis elegans"
/strain="N2"
/db_xref="taxon:6239"
/clone="DDRT25A"
/clone_lib="mRNA from cadmium-responsive gene"
/tissue_type="whole animal"
/dev_stage="mixed population"

BASE COUNT 102 a 70 c 73 g 79 t

ORIGIN

1 tagttaggca caggatgtac gaggaaattc tactatttc gggctcacc acgaaatcac
61 aataaccggg attttttagt ggtcccgca cgttgacctt cttggcgct caggcactcc
121 gccgcgacat tcgccgacac gcctacaatc cacgtgtcaa tcgtcagatt tgcggatcaa
181 taatgggtgat gaaagggtgga aatacgtata tggatcatgt tcaaaggcat caagctgaac
241 aattcgaaga gttgaatcgg cgtcgacaac ttttgatcc aagaccgtaa gaaatttgaa
301 agctattggt gaaaaaaaaa aaaa

//

LOCUS AF071377 272 bp mRNA EST 01-JUL-1998
DEFINITION AF071377 mRNA from cadmium-responsive gene *Caenorhabditis elegans*
cDNA clone DDRT24, mRNA sequence.

ACCESSION AF071377

NID g3265122

KEYWORDS EST.

SOURCE *Caenorhabditis elegans*.

ORGANISM *Caenorhabditis elegans*

Eukaryota; Metazoa; Nematoda; Secernentea; Rhabditia; Rhabditida;
Rhabditina; Rhabditoidea; Rhabditidae; Peloderinae; *Caenorhabditis*.

REFERENCE 1 (bases 1 to 272)

AUTHORS Freedman, J.H. and Liao, H.-C.

TITLE Cadmium-Regulated Genes from the Nematode *Caenorhabditis elegans*.
Identification and cloning of new cadmium-responsive genes by
differential display

JOURNAL Unpublished (1998)

COMMENT

Contact: Jonathan H. Freedman
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Duke University
Box 90328, Durham, NC 27708-0328, USA
Email: jonf@duke.edu.

FEATURES Location/Qualifiers

source 1..272
/organism="Caenorhabditis elegans"
/strain="N2"
/db_xref="taxon:6239"
/clone="DDRT24"
/clone_lib="mRNA from cadmium-responsive gene"



Inventor: FREEDMAN et al
SN 09/437,450/Sheet 23 of 43
Atty. Dkt.: 1579-315

Fig. 5A-19

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/tissue_type="whole animal"
/dev_stage="mixed population"
BASE COUNT  91 a  74 c  51 g  56 t
ORIGIN
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61  gcttcaaagc aattgaaga aactctctgt caccaacatt ccaggaatcg aggagggtcaa
121 catgattaag acgatggaac cgttatccac ttcaacaacc caaaagtcta aacctctgtt
181 cccagccaat accttctctg tcacaggatc agccgataac aagtcagatc actgaaatgt
241 ctcccaggga atgctgaact ggtcagagtc ct
//
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LOCUS  AF071395  218 bp  rRNA      INV  30-JUN-1998
DEFINITION  Caenorhabditis elegans strain N2 clone DDRT48, rRNA sequence.
ACCESSION  AF071395
NID       g3265140
KEYWORDS
SOURCE    Caenorhabditis elegans.
ORGANISM  Caenorhabditis elegans
          Eukaryota; Metazoa; Nematoda; Secernentea; Rhabditia; Rhabditida;
          Rhabditina; Rhabditoidea; Rhabditidae; Peloderinae; Caenorhabditis.
REFERENCE  1 (bases 1 to 218)
AUTHORS   Freedman,J.H. and Liao,H.-C.
TITLE     Cadmium-Regulated Genes from the Nematode Caenorhabditis elegans.
          Identification and cloning of new cadmium-responsive genes by
          differential display
JOURNAL   Unpublished
REFERENCE  2 (bases 1 to 218)
AUTHORS   Freedman,J.H. and Liao,H.-C.
TITLE     Direct Submission
JOURNAL   Submitted (09-JUN-1998) Nicholas School of the Environment, Duke
          University, Box 90328, Durham, NC 27708-0328, USA
FEATURES   Location/Qualifiers
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source    1..218
           /organism="Caenorhabditis elegans"
           /strain="N2"
           /db_xref="taxon:6239"
           /tissue_type="whole animal"
           /dev_stage="mixed population"
           /note="from cadmium-responsive gene"
           /clone="DDRT48"
misc_RNA   1..218
           /note="similar to Caenorhabditis elegans rDNA tandem
           repeats"
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BASE COUNT  58 a  58 c  38 g  64 t
ORIGIN
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1  tttttttt ttgcacaag cggggactaa aagcaagctt ttcaccacc gatgatacaa
61  ggcgtttta gtaccttagg atcgactgac ccacatcaa ctactgttcc acgtggaacc
121 ctttccact tcagtcttca aggatcgaac ttgaatattt gctactacca tacgatctgc
181 actgacggaa agtccagccg agcctacctc atagttaa
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LOCUS  AF071390  238 bp  rRNA      INV  30-JUN-1998
DEFINITION  Caenorhabditis elegans strain N2 clone DDRT38, rRNA sequence.
ACCESSION  AF071390
```




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Fig. 5A-20

NID g3265135
KEYWORDS
SOURCE *Caenorhabditis elegans*.
ORGANISM *Caenorhabditis elegans*
Eukaryota; Metazoa; Nematoda; Secernentea; Rhabditia; Rhabditida;
Rhabditina; Rhabditoidea; Rhabditidae; Peloderinae; *Caenorhabditis*.
REFERENCE 1 (bases 1 to 238)
AUTHORS Freedman, J.H. and Liao, H.-C.
TITLE Cadmium-Regulated Genes from the Nematode *Caenorhabditis elegans*.
Identification and cloning of new cadmium-responsive genes by
differential display
JOURNAL Unpublished
REFERENCE 2 (bases 1 to 238)
AUTHORS Freedman, J.H. and Liao, H.-C.
TITLE Direct Submission
JOURNAL Submitted (09-JUN-1998) Nicholas School of the Environment, Duke
University, Box 90328, Durham, NC 27708-0328, USA
FEATURES Location/Qualifiers
source 1..238
/organism="*Caenorhabditis elegans*"
/strain="N2"
/db_xref="taxon:6239"
/tissue_type="whole animal"
/dev_stage="mixed population"
/note="from cadmium-responsive gene"
/clone="DDRT38"
misc_RNA 1..238
/note="similar to *Caenorhabditis elegans* rDNA tandem
repeats"
BASE COUNT 58 a 50 c 58 g 72 t
ORIGIN
1 tttttttt tttgccggg cgggtgttac aaccggcagg gacgtaatca acgtgagctg
61 atgactcgcg ctactagcg attcctcgtt taagggaat aattacaata ccctatcccc
121 gacatggaag aattcaacg gttaccgat accttcaac acgggaaaac taccgggttg
181 gacaccatta ggactgacag attgaaagtc ttgtcgatt tgggtggttg ttgtgcat
//

LOCUS AF071384 253 bp rRNA INV 30-JUN-1998
DEFINITION *Caenorhabditis elegans* strain N2 clone DDRT32, rRNA sequence.
ACCESSION AF071384
NID g3265129
KEYWORDS
SOURCE *Caenorhabditis elegans*.
ORGANISM *Caenorhabditis elegans*
Eukaryota; Metazoa; Nematoda; Secernentea; Rhabditia; Rhabditida;
Rhabditina; Rhabditoidea; Rhabditidae; Peloderinae; *Caenorhabditis*.
REFERENCE 1 (bases 1 to 253)
AUTHORS Freedman, J.H. and Liao, H.-C.
TITLE Cadmium-Regulated Genes from the Nematode *Caenorhabditis elegans*.
Identification and cloning of new cadmium-responsive genes by
differential display
JOURNAL Unpublished
REFERENCE 2 (bases 1 to 253)
AUTHORS Freedman, J.H. and Liao, H.-C.



Inventor: FREEDMAN et al
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Atty. Dkt.: 1579-315

Fig. 5A-21

TITLE Direct Submission
JOURNAL Submitted (09-JUN-1998) Nicholas School of the Environment, Duke
University, Box 90328, Durham, NC 27708-0328, USA
FEATURES Location/Qualifiers
source 1..253
/organism="Caenorhabditis elegans"
/strain="N2"
/db_xref="taxon:6239"
/tissue_type="whole animal"
/dev_stage="mixed population"
/note="from cadmium-responsive gene"
/clone="DDRT32"
misc_RNA 1..253
/note="similar to Caenorhabditis elegans rDNA tandem
repeats"
BASE COUNT 45 a 60 c 69 g 79 t
ORIGIN
1 tagggcctgt tgggtgatgc ttgtccggcg cagttctgtc tgcctgatac ttcgggttga
61 tggcggacta gtgattgtgc ttcttcgga ccgtttctgg tgtgtgcttg gacctcggtt
121 ctatgatcct gatgcgtcat ctatcaaccg tactgtaacc ggtacgactc agggaatccg
181 actgtctaataaaaacagag gtgacagatg gtccttcgcg acgttaactg tcatgtatt
241 ctccccagtg cac
//
LOCUS AF071376 277 bp rRNA INV 30-JUN-1998
DEFINITION Caenorhabditis elegans strain N2 clone DDRT23, rRNA sequence.
ACCESSION AF071376
NID g3265121
KEYWORDS
SOURCE Caenorhabditis elegans.
ORGANISM Caenorhabditis elegans
Eukaryota; Metazoa; Nematoda; Secernentea; Rhabditia; Rhabditida;
Rhabditina; Rhabditoidea; Rhabditidae; Peloderinae; Caenorhabditis.
REFERENCE 1 (bases 1 to 277)
AUTHORS Freedman,J.H. and Liao,H.-C.
TITLE Cadmium-Regulated Genes from the Nematode Caenorhabditis elegans.
Identification and cloning of new cadmium-responsive genes by
differential display
JOURNAL Unpublished
REFERENCE 2 (bases 1 to 277)
AUTHORS Freedman,J.H. and Liao,H.-C.
TITLE Direct Submission
JOURNAL Submitted (09-JUN-1998) Nicholas School of the Environment, Duke
University, Box 90328, Durham, NC 27708-0328, USA
FEATURES Location/Qualifiers
source 1..277
/organism="Caenorhabditis elegans"
/strain="N2"
/db_xref="taxon:6239"
/tissue_type="whole animal"
/dev_stage="mixed population"
/note="from cadmium-responsive gene"
/clone="DDRT23"
misc_RNA 1..277



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Fig. 5A-22

/note="similar to *Caenorhabditis elegans* rDNA tandem repeats"

BASE COUNT 67 a 59 c 73 g 78 t
ORIGIN

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1 tttttttt ttggggggg gcggtgtgta caaagggcag ggacgtaac aacgtgagct
61 gatgactcac acttctaggc attcctcgtt taagggaata attacaatac ccatcccga
121 catggaagaa ttcaacggg ttaccgatac ctttcggca acacgggaaa actcaccgg
181 tccggacacc attaggactg acagattgaa agctcttct cgaattggtg gttggtggtg
241 catggccgtt ctagttggg ggagtacaa tcactag
```

//

LOCUS AF071375 216 bp mRNA EST 30-JUN-1998
DEFINITION AF071375 mRNA from cadmium-responsive gene *Caenorhabditis elegans*
cDNA clone VL5, mRNA sequence.

ACCESSION AF071375

NID g3265120

KEYWORDS EST.

SOURCE *Caenorhabditis elegans*.

ORGANISM *Caenorhabditis elegans*

Eukaryota; Metazoa; Nematoda; Secernentea; Rhabditia; Rhabditida;
Rhabditina; Rhabditoidea; Rhabditidae; Peloderinae; *Caenorhabditis*.

REFERENCE 1 (bases 1 to 216)

AUTHORS Freedman, J.H. and Liao, H.-C.

TITLE Cadmium-Regulated Genes from the Nematode *Caenorhabditis elegans*.
Identification and cloning of new cadmium-responsive genes by
differential display

JOURNAL Unpublished (1998)

COMMENT

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Email: jonf@duke.edu.

FEATURES Location/Qualifiers

source 1..216
/organism="Caenorhabditis elegans"
/strain="N2"
/db_xref="taxon:6239"
/clone="VL5"
/clone_lib="mRNA from cadmium-responsive gene"
/tissue_type="whole animal"
/dev_stage="mixed population"

BASE COUNT 69 a 37 c 66 g 44 t
ORIGIN

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1 tagcaagtgc ggagacaaat gtgaatgcag tggagacaag tgtgtgaga agtactgctg
61 tgaggaggcc agtgagaaaa aatgctgtcc agctggatgt aaggagact gcaagtgtgc
121 aaactgtcat tgtgcagagc agaagcagtg cgagacaaga cccatcaaca ccagggaact
181 gctgcggctc attaaatgt ttcaagttg aatcta
```

//

LOCUS AF071374 356 bp mRNA EST 30-JUN-1998
DEFINITION AF071374 mRNA from cadmium-responsive gene *Caenorhabditis elegans*
cDNA clone VL9, mRNA sequence.
ACCESSION AF071374



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Fig. 5A-23

NID g3265119
KEYWORDS EST.
SOURCE *Caenorhabditis elegans*.
ORGANISM *Caenorhabditis elegans*
Eukaryota; Metazoa; Nematoda; Secernentea; Rhabditia; Rhabditida;
Rhabditina; Rhabditoidea; Rhabditidae; Peloderinae; *Caenorhabditis*.
REFERENCE 1 (bases 1 to 356)
AUTHORS Freedman, J.H. and Liao, H.-C.
TITLE Cadmium-Regulated Genes from the Nematode *Caenorhabditis elegans*.
Identification and cloning of new cadmium-responsive genes by
differential display
JOURNAL Unpublished (1998)
COMMENT

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FEATURES Location/Qualifiers
source 1..356
/organism="Caenorhabditis elegans"
/strain="N2"
/db_xref="taxon:6239"
/clone="VL9"
/clone_lib="mRNA from cadmium-responsive gene"
/tissue_type="whole animal"
/dev_stage="mixed population"

BASE COUNT 126 a 70 c 55 g 105 t
ORIGIN

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1 caatcgatga gtatcctcgt acaattaatg catgatgcaa ttggaatat tccgaggtag
61 gtaaacggg gaacatcacg agatagatga atacagcgga tatcatatag gcacgcagaa
121 tatcaataaa atttcaaat ttcaaaata tcataacgat tataacacgt agcagggaa
181 tttaagcca ctgaaataaa tatagaataa tatatacaga cacacacaat ctgatttca
241 gaacatttc agtaacgacg ttgaacttt ttgaagatt tcgccgagcc ttgatcact
301 ttgcagtca caactccac aactttctt tctctcttt cctctacatc gattgc
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LOCUS AF071373 199 bp mRNA EST 30-JUN-1998
DEFINITION AF071373 mRNA from cadmium-responsive gene *Caenorhabditis elegans*
cDNA clone VL3A, mRNA sequence.
ACCESSION AF071373
NID g3265118
KEYWORDS EST.
SOURCE *Caenorhabditis elegans*.
ORGANISM *Caenorhabditis elegans*
Eukaryota; Metazoa; Nematoda; Secernentea; Rhabditia; Rhabditida;
Rhabditina; Rhabditoidea; Rhabditidae; Peloderinae; *Caenorhabditis*.
REFERENCE 1 (bases 1 to 199)
AUTHORS Freedman, J.H. and Liao, H.-C.
TITLE Cadmium-Regulated Genes from the Nematode *Caenorhabditis elegans*.
Identification and cloning of new cadmium-responsive genes by
differential display
JOURNAL Unpublished (1998)
COMMENT



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Fig. 5A-24

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FEATURES Location/Qualifiers
source 1..199
 /organism="Caenorhabditis elegans"
 /strain="N2"
 /db_xref="taxon:6239"
 /clone="VL3A"
 /clone_lib="mRNA from cadmium-responsive gene"
 /tissue_type="whole animal"
 /dev_stage="mixed population"

BASE COUNT 55 a 31 c 20 g 93 t

ORIGIN

1 taaactctat gtttattgt ttttcaaatt tcaaattga aaattgaaac ttcaatttg
61 attagagtct ttgtggttg actcctttt ttcatggaac atcttttacg tacgtcatac
121 tttgtatac acattacaa atgtgtgtt gtaattatat gtaacaaatt tctatgtaca
181 cctcatctca tctctctat

//

LOCUS AF071372 326 bp mRNA EST 30-JUN-1998
DEFINITION AF071372 mRNA from cadmium-responsive gene *Caenorhabditis elegans*
 cDNA clone VL21A, mRNA sequence.

ACCESSION AF071372

NID g3265117

KEYWORDS EST.

SOURCE *Caenorhabditis elegans*.

ORGANISM *Caenorhabditis elegans*

Eukaryota; Metazoa; Nematoda; Secernentea; Rhabditia; Rhabditida;
Rhabditina; Rhabditoidea; Rhabditidae; Peloderinae; *Caenorhabditis*.

REFERENCE 1 (bases 1 to 326)

AUTHORS Freedman, J.H. and Liao, H.-C.

TITLE Cadmium-Regulated Genes from the Nematode *Caenorhabditis elegans*.
Identification and cloning of new cadmium-responsive genes by
differential display

JOURNAL Unpublished (1998)

COMMENT

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Email: jonf@duke.edu.

FEATURES Location/Qualifiers
source 1..326
 /organism="Caenorhabditis elegans"
 /strain="N2"
 /db_xref="taxon:6239"
 /clone="VL21A"
 /clone_lib="mRNA from cadmium-responsive gene"
 /tissue_type="whole animal"
 /dev_stage="mixed population"

BASE COUNT 76 a 61 c 59 g 130 t



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Fig. 5A-25

ORIGIN

1 cgtctccctt tttacttac ttgtaggtgc gtcttgtaa ttgtacgtac ttatatttag
61 caaacctctg gtgttacctc tgccttttg taaaatttgt tacacacttt cttttggca
121 gtaaaagttg ttagcacac ttaacactc tgcactacc aaggtaatag tgagcccatc
181 gaggtttat aaatgcctt gatagtttaa agtgttgag gatcgagcta ctttgtagt
241 ggaaagccgt gttcttgtc ttgtttgtt cgaigattta cccaactatt tgatatttg
301 attaccgga ttatataata caccctc

//

LOCUS AF071371 147 bp mRNA EST 30-JUN-1998
DEFINITION AF071371 mRNA from cadmium-responsive gene *Caenorhabditis elegans*
cDNA clone VL20B, mRNA sequence.

ACCESSION AF071371

NID g3265116

KEYWORDS EST.

SOURCE *Caenorhabditis elegans*.

ORGANISM *Caenorhabditis elegans*

Eukaryota; Metazoa; Nematoda; Secernentea; Rhabditia; Rhabditida;
Rhabditina; Rhabditoidea; Rhabditidae; Peloderinae; *Caenorhabditis*.

REFERENCE 1 (bases 1 to 147)

AUTHORS Freedman, J.H. and Liao, H.-C.

TITLE Cadmium-Regulated Genes from the Nematode *Caenorhabditis elegans*.
Identification and cloning of new cadmium-responsive genes by
differential display

JOURNAL Unpublished (1998)

COMMENT

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Email: jonf@duke.edu.

FEATURES Location/Qualifiers

source 1..147
/organism="Caenorhabditis elegans"
/strain="N2"
/db_xref="taxon:6239"
/clone="VL20B"
/clone_lib="mRNA from cadmium-responsive gene"
/tissue_type="whole animal"
/dev_stage="mixed population"

BASE COUNT 54 a 27 c 22 g 44 t

ORIGIN

1 tggcaatata cctagaaga gtaaatatta tgacgtggca ataatacaga agcagtcgga
61 actacaactc acgaaacatt ttgaaagttt acctcttgat ttctttgaa tgtttgtct
121 cacacaataa agaaaattct accgtac

//

LOCUS AF071370 285 bp mRNA EST 30-JUN-1998
DEFINITION AF071370 mRNA from cadmium-responsive gene *Caenorhabditis elegans*
cDNA clone VL19, mRNA sequence.

ACCESSION AF071370

NID g3265115

KEYWORDS EST.

SOURCE *Caenorhabditis elegans*.



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Fig. 5A-26

ORGANISM *Caenorhabditis elegans*

Eukaryota; Metazoa; Nematoda; Secernentea; Rhabditia; Rhabditida;
Rhabditina; Rhabditoidea; Rhabditidae; Peloderinae; *Caenorhabditis*.

REFERENCE 1 (bases 1 to 285)

AUTHORS Freedman, J.H. and Liao, H.-C.

TITLE Cadmium-Regulated Genes from the Nematode *Caenorhabditis elegans*.
Identification and cloning of new cadmium-responsive genes by
differential display

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FEATURES Location/Qualifiers

source 1..285
/organism="Caenorhabditis elegans"
/strain="N2"
/db_xref="taxon:6239"
/clone="VL19"
/clone_lib="mRNA from cadmium-responsive gene"
/tissue_type="whole animal"
/dev_stage="mixed population"

BASE COUNT 91 a 46 c 52 g 96 t

ORIGIN

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1 cgtggcaata cacagaatat acacattgag atggttcgaa tggcaaagag aaggtggtgg
61 ctaatcattc tatatagcac aacgccaaat ataatttcga tggcgcgaa ttgtgatgg
121 tgaatggaat taacaaaatt ttctaaacgt ctcattccg agtaatttt cgtttccct
181 ccactttcgt atttatattg tttcttaga aaaagtattt attgcatcgg gtgctcattg
241 tctttgtga gaataataac tcgttcactt cccaaaaaaa aaaaa
//
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LOCUS AF071369 216 bp mRNA EST 30-JUN-1998

DEFINITION AF071369 mRNA from cadmium-responsive gene *Caenorhabditis elegans*
cDNA clone VL13, mRNA sequence.

ACCESSION AF071369

NID g3265114

KEYWORDS EST.

SOURCE *Caenorhabditis elegans*.

ORGANISM *Caenorhabditis elegans*

Eukaryota; Metazoa; Nematoda; Secernentea; Rhabditia; Rhabditida;
Rhabditina; Rhabditoidea; Rhabditidae; Peloderinae; *Caenorhabditis*.

REFERENCE 1 (bases 1 to 216)

AUTHORS Freedman, J.H. and Liao, H.-C.

TITLE Cadmium-Regulated Genes from the Nematode *Caenorhabditis elegans*.
Identification and cloning of new cadmium-responsive genes by
differential display

JOURNAL Unpublished (1998)

COMMENT

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Email: jonf@duke.edu.

Fig. 5A-27

FEATURES Location/Qualifiers

source 1..216
/organism="Caenorhabditis elegans"
/strain="N2"
/db_xref="taxon:6239"
/clone="VL13"
/clone_lib="mRNA from cadmium-responsive gene"
/tissue_type="whole animal"
/dev_stage="mixed population"

BASE COUNT 69 a 37 c 66 g 44 t

ORIGIN

1 tagcaagtcg gagacaaatg tgaatgcagt ggagacaagt gttgtgagaa gtactgctgt
61 gaggaggcca gtgagaaaa atgctgtcca gctggatgta agggagactg caagtgtgca
121 aactgtcatt gtgcagagca gaagcagtcg ggagacaaga cccatcaaca ccagggaact
181 gctgcggctc attaaatgt ttcagattg aatcta
//

LOCUS AF071368 142 bp mRNA EST 30-JUN-1998
DEFINITION AF071368 mRNA from cadmium-responsive gene *Caenorhabditis elegans*
cDNA clone VL11, mRNA sequence.

ACCESSION AF071368

NID g3265113

KEYWORDS EST.

SOURCE *Caenorhabditis elegans*.

ORGANISM *Caenorhabditis elegans*

Eukaryota; Metazoa; Nematoda; Secernentea; Rhabditia; Rhabditida;
Rhabditina; Rhabditoidea; Rhabditidae; Peloderinae; *Caenorhabditis*.

REFERENCE 1 (bases 1 to 142)

AUTHORS Freedman, J.H. and Liao, H.-C.

TITLE Cadmium-Regulated Genes from the Nematode *Caenorhabditis elegans*.
Identification and cloning of new cadmium-responsive genes by
differential display

JOURNAL Unpublished (1998)

COMMENT

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FEATURES Location/Qualifiers

source 1..142
/organism="Caenorhabditis elegans"
/strain="N2"
/db_xref="taxon:6239"
/clone="VL11"
/clone_lib="mRNA from cadmium-responsive gene"
/tissue_type="whole animal"
/dev_stage="mixed population"

BASE COUNT 45 a 21 c 23 g 53 t

ORIGIN

1 gtgctggagt tgttgtatt tcagaataaa taaataaaa tatgattga gtagaatatt
61 aaataaagt ccttcacatt aaattatcaa ttgcttgcc tcgaatatct tccagctggt
121 gattgcattc gttcattcct tc



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Fig. 5A-28

//

LOCUS AF071367 84 bp mRNA EST 30-JUN-1998
DEFINITION AF071367 mRNA from cadmium-responsive gene *Caenorhabditis elegans*
cDNA clone VL10, mRNA sequence.
ACCESSION AF071367
NID g3265112
KEYWORDS EST.
SOURCE *Caenorhabditis elegans*.
ORGANISM *Caenorhabditis elegans*
Eukaryota; Metazoa; Nematoda; Secernentea; Rhabditia; Rhabditida;
Rhabditina; Rhabditoidea; Rhabditidae; Peloderinae; *Caenorhabditis*.
REFERENCE 1 (bases 1 to 84)
AUTHORS Freedman, J.H. and Liao, H.-C.
TITLE Cadmium-Regulated Genes from the Nematode *Caenorhabditis elegans*.
Identification and cloning of new cadmium-responsive genes by
differential display
JOURNAL Unpublished (1998)
COMMENT
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Email: jonf@duke.edu.
FEATURES Location/Qualifiers
source 1..84
/organism="Caenorhabditis elegans"
/strain="N2"
/db_xref="taxon:6239"
/clone="VL10"
/clone_lib="mRNA from cadmium-responsive gene"
/tissue_type="whole animal"
/dev_stage="mixed population"
BASE COUNT 29 a 10 c 27 g 18 t
ORIGIN
1 tagcaagtgc ggagacaaat gtgaatgcag tggagacaag tgtgtgaga agtactgctg
61 tgaggattcc agtgagaaaa aatc

//

LOCUS AF071366 217 bp mRNA EST 30-JUN-1998
DEFINITION AF071366 mRNA from cadmium-responsive gene *Caenorhabditis elegans*
cDNA clone VL1, mRNA sequence.
ACCESSION AF071366
NID g3265111
KEYWORDS EST.
SOURCE *Caenorhabditis elegans*.
ORGANISM *Caenorhabditis elegans*
Eukaryota; Metazoa; Nematoda; Secernentea; Rhabditia; Rhabditida;
Rhabditina; Rhabditoidea; Rhabditidae; Peloderinae; *Caenorhabditis*.
REFERENCE 1 (bases 1 to 217)
AUTHORS Freedman, J.H. and Liao, H.-C.
TITLE Cadmium-Regulated Genes from the Nematode *Caenorhabditis elegans*.
Identification and cloning of new cadmium-responsive genes by
differential display



Inventor: FREEDMAN et al
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Fig. 5A-29

JOURNAL Unpublished (1998)
COMMENT

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FEATURES Location/Qualifiers

source 1..217
/organism="Caenorhabditis elegans"
/strain="N2"
/db_xref="taxon:6239"
/clone="VL1"
/clone_lib="mRNA from cadmium-responsive gene"
/tissue_type="whole animal"
/dev_stage="mixed population"

BASE COUNT 69 a 37 c 67 g 44 t

ORIGIN

1 tagcaagtgc ggagacaaat gtgaatgcag tggagacaag tgttgaga agtactgctg
61 tgaggaggcc agtgagaaaa aatgctgtcc agctggatgt aaggagact gcaagtgtgc
121 aaactgtcat tgtgcagagc agaagcagtg cggagacaag acctcatcaac accagggaac
181 tgctgcggct cattaaaatg ttccagagt gaattca
//

LOCUS AF071365 292 bp mRNA EST 30-JUN-1998
DEFINITION AF071365 mRNA from cadmium-responsive gene *Caenorhabditis elegans*
cDNA clone DDRT22, mRNA sequence.

ACCESSION AF071365

NID g3265110

KEYWORDS EST.

SOURCE *Caenorhabditis elegans*.

ORGANISM *Caenorhabditis elegans*

Eukaryota; Metazoa; Nematoda; Secernentea; Rhabditia; Rhabditida;
Rhabditina; Rhabditoidea; Rhabditidae; Peloderinae; *Caenorhabditis*.

REFERENCE 1 (bases 1 to 292)

AUTHORS Freedman, J.H. and Liao, H.-C.

TITLE Cadmium-Regulated Genes from the Nematode *Caenorhabditis elegans*.
Identification and cloning of new cadmium-responsive genes by
differential display

JOURNAL Unpublished (1998)

COMMENT

Contact: Jonathan H. Freedman
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FEATURES Location/Qualifiers

source 1..292
/organism="Caenorhabditis elegans"
/strain="N2"
/db_xref="taxon:6239"
/clone="DDRT22"
/clone_lib="mRNA from cadmium-responsive gene"
/tissue_type="whole animal"



Inventor: FREEDMAN et al
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Fig. 5A-30

/dev_stage="mixed population"
BASE COUNT 101 a 60 c 50 g 81 t
ORIGIN

1 tggtagtcca caggacaaa tacatttagt ttacaagcc gccacgcgac acgcaacgcc
61 gtaaattctac caaggfataa caacaacatg tcaagcacag acccatatct tattgtgctg
121 gaacgagatg gcctctactg tagtaatga caattggact cttatccacc ggatcactta
181 acctatttg atattaatat tcctattggg atcacagggt ttgcccgaaa atgtaattat
241 gaactgaatt gaaatgtatt ataaattagt tttattggg aaaaaaaaaa aa
//

LOCUS AF071364 188 bp mRNA EST 30-JUN-1998
DEFINITION AF071364 mRNA from cadmium-responsive gene *Caenorhabditis elegans*
cDNA clone DDRT21D, mRNA sequence.

ACCESSION AF071364

NID g3265109

KEYWORDS EST.

SOURCE *Caenorhabditis elegans*.

ORGANISM *Caenorhabditis elegans*

Eukaryota; Metazoa; Nematoda; Secernentea; Rhabditia; Rhabditida;
Rhabditina; Rhabditoidea; Rhabditidae; Peloderinae; *Caenorhabditis*.

REFERENCE 1 (bases 1 to 188)

AUTHORS Freedman, J.H. and Liao, H.-C.

TITLE Cadmium-Regulated Genes from the Nematode *Caenorhabditis elegans*.
Identification and cloning of new cadmium-responsive genes by
differential display

JOURNAL Unpublished (1998)

COMMENT

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Email: jonf@duke.edu.

FEATURES Location/Qualifiers

source 1..188
/organism="Caenorhabditis elegans"
/strain="N2"
/db_xref="taxon:6239"
/clone="DDRT21D"
/clone_lib="mRNA from cadmium-responsive gene"
/tissue_type="whole animal"
/dev_stage="mixed population"

BASE COUNT 44 a 31 c 51 g 62 t

ORIGIN

1 tatagggttaa gtgatccggt ggataagagt ccaattgtcg attactacag tagaggccat
61 ctgcttccgc acaataaga tatgggtctg tgcttgacat gttgtgttg taccttggtg
121 agatttacgg cagttgcgtg tcgttgccgg ctgtgaaac taaatgtatt ttccgtgtg
181 gagtacca
//

LOCUS AF071363 289 bp mRNA EST 30-JUN-1998
DEFINITION AF071363 mRNA from cadmium-responsive gene *Caenorhabditis elegans*
cDNA clone DDRT20, mRNA sequence.

ACCESSION AF071363

NID g3265108



Inventor: FREEDMAN et al
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Atty. Dkt.: 1579-315

Fig. 5A-31

KEYWORDS EST.

SOURCE *Caenorhabditis elegans*.

ORGANISM *Caenorhabditis elegans*

Eukaryota; Metazoa; Nematoda; Secernentea; Rhabditia; Rhabditida;
Rhabditina; Rhabditoidea; Rhabditidae; Peloderinae; *Caenorhabditis*.

REFERENCE 1 (bases 1 to 289)

AUTHORS Freedman, J.H. and Liao, H.-C.

TITLE Cadmium-Regulated Genes from the Nematode *Caenorhabditis elegans*.
Identification and cloning of new cadmium-responsive genes by
differential display

JOURNAL Unpublished (1998)

COMMENT

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FEATURES Location/Qualifiers

source 1..289

/organism="Caenorhabditis elegans"

/strain="N2"

/db_xref="taxon:6239"

/clone="DDRT20"

/clone_lib="mRNA from cadmium-responsive gene"

/tissue_type="whole animal"

/dev_stage="mixed population"

BASE COUNT 63 a 56 c 75 g 95 t

ORIGIN

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1 tttttttt ttgtacat tatggcaaat ggaggcactg tctggtccg tggggtcatg
61 gtgcattgga tcatgtgata tcctatcctg gcttctaate ccaatgcgtt tacagtcag
121 tgggcttgaa cgggcctagc tgagcttgga caaagttcct tgacagtacg ggtegacaag
181 ctgacagtc agaaattagg cactgtggg ctacaggtgc tcgtaattat ttgagagtt
241 ctgggcttcc ggacttttac taggctaate taagacaact gggctctaa
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//

LOCUS AF071362 214 bp mRNA EST 30-JUN-1998

DEFINITION AF071362 mRNA from cadmium-responsive gene *Caenorhabditis elegans*
cDNA clone DDRT2, mRNA sequence.

ACCESSION AF071362

NID g3265107

KEYWORDS EST.

SOURCE *Caenorhabditis elegans*.

ORGANISM *Caenorhabditis elegans*

Eukaryota; Metazoa; Nematoda; Secernentea; Rhabditia; Rhabditida;
Rhabditina; Rhabditoidea; Rhabditidae; Peloderinae; *Caenorhabditis*.

REFERENCE 1 (bases 1 to 214)

AUTHORS Freedman, J.H. and Liao, H.-C.

TITLE Cadmium-Regulated Genes from the Nematode *Caenorhabditis elegans*.
Identification and cloning of new cadmium-responsive genes by
differential display

JOURNAL Unpublished (1998)

COMMENT

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Nicholas School of the Environment



Inventor: FREEDMAN et al
SN 09/437,450/Sheet 36 of 43
Atty. Dkt.: 1579-315

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Fig. 5A-32

FEATURES Location/Qualifiers

source 1..214
/organism="Caenorhabditis elegans"
/strain="N2"
/db_xref="taxon:6239"
/clone="DDRT2"
/clone_lib="mRNA from cadmium-responsive gene"
/tissue_type="whole animal"
/dev_stage="mixed population"

BASE COUNT 77 a 37 c 40 g 60 t

ORIGIN

1 aaatcatggc ggcggatgca acagtcttct caattggcaa ctgtctatat cattccgcaa
61 cacatttcgg atgtctcga aaaggacttc ccaaagtat tggagtactg tgaaagaggt
121 cgtcatgaag ttcccaaag gactttacta tgtgaattaa attgtcaaac tagtagtcag
181 atcaataaaa ttttacgtgg aaaaaaaaaa aaaa

//

LOCUS AF071361 322 bp mRNA EST 30-JUN-1998

DEFINITION AF071361 mRNA from cadmium-responsive gene *Caenorhabditis elegans*
cDNA clone DDRT19, mRNA sequence.

ACCESSION AF071361

NID g3265106

KEYWORDS EST.

SOURCE *Caenorhabditis elegans*.

ORGANISM *Caenorhabditis elegans*

Eukaryota; Metazoa; Nematoda; Secernentea; Rhabditia; Rhabditida;
Rhabditina; Rhabditoidea; Rhabditidae; Peloderinae; *Caenorhabditis*.

REFERENCE 1 (bases 1 to 322)

AUTHORS Freedman, J.H. and Liao, H.-C.

TITLE Cadmium-Regulated Genes from the Nematode *Caenorhabditis elegans*.
Identification and cloning of new cadmium-responsive genes by
differential display

JOURNAL Unpublished (1998)

COMMENT

Contact: Jonathan H. Freedman
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FEATURES Location/Qualifiers

source 1..322
/organism="Caenorhabditis elegans"
/strain="N2"
/db_xref="taxon:6239"
/clone="DDRT19"
/clone_lib="mRNA from cadmium-responsive gene"
/tissue_type="whole animal"
/dev_stage="mixed population"

BASE COUNT 102 a 77 c 70 g 73 t

ORIGIN

1 taggtgaccg tagagaagcc cagatattta aaatctaaag ggaaactgtt tgaccagaag



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Fig. 5A-33

61 attagagccc agttgtctta gatagcctag taaaagtcg gaagcccaga actctcaaaa
121 taattacgag cacctgtagc ccacaagtgc ctaattctg actgtcaagc ttgtcgacc
181 gtactgtcaa ggaacttgt caagctcagc taggcccgtt caagcccaca tgactgtaa
241 cgattcgga ttagaagcca ggataggata tccatgatcc aatgcacat gacccacgga
301 accagatgtg ctcattacat ag

//

LOCUS AF071360 228 bp mRNA EST 30-JUN-1998
DEFINITION AF071360 mRNA from cadmium-responsive gene *Caenorhabditis elegans*
cDNA clone DDRT18, mRNA sequence.
ACCESSION AF071360
NID g3265105
KEYWORDS EST.
SOURCE *Caenorhabditis elegans*.
ORGANISM *Caenorhabditis elegans*
Eukaryota; Metazoa; Nematoda; Secernentea; Rhabditia; Rhabditida;
Rhabditina; Rhabditoidea; Rhabditidae; Peloderinae; *Caenorhabditis*.
REFERENCE 1 (bases 1 to 228)
AUTHORS Freedman, J.H. and Liao, H.-C.
TITLE Cadmium-Regulated Genes from the Nematode *Caenorhabditis elegans*.
Identification and cloning of new cadmium-responsive genes by
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JOURNAL Unpublished (1998)
COMMENT
Contact: Jonathan H. Freedman
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Email: jonf@duke.edu.

FEATURES Location/Qualifiers
source 1..228
/organism="Caenorhabditis elegans"
/strain="N2"
/db_xref="taxon:6239"
/clone="DDRT18"
/clone_lib="mRNA from cadmium-responsive gene"
/tissue_type="whole animal"
/dev_stage="mixed population"

BASE COUNT 70 a 49 c 20 g 89 t

ORIGIN

1 tttttttt ttccccatt catcacacac tatcatgtt tatattcaga cctattacct
61 gtccagaaaa actgagctga aaaaatcccg gacgagcagc tcttcacat tcaaatctt
121 ccatcttc cccactcaat tcattgtt ttgtcttgat ttcaaat ttgccttat
181 tattttattg cttaaataag aaaactgtta ctttgcaaaa aaaaaaaa

//

LOCUS AF071359 255 bp mRNA EST 30-JUN-1998
DEFINITION AF071359 mRNA from cadmium-responsive gene *Caenorhabditis elegans*
cDNA clone DDRT1, mRNA sequence.
ACCESSION AF071359
NID g3265104
KEYWORDS EST.
SOURCE *Caenorhabditis elegans*.
ORGANISM *Caenorhabditis elegans*



Inventor: FREEDMAN et al
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Atty. Dkt.: 1579-315

Fig. 5A-34

Eukaryota; Metazoa; Nematoda; Secernentea; Rhabditia; Rhabditida;
Rhabditina; Rhabditoidea; Rhabditidae; Peloderinae; Caenorhabditis.

REFERENCE 1 (bases 1 to 255)

AUTHORS Freedman, J.H. and Liao, H.-C.

TITLE Cadmium-Regulated Genes from the Nematode *Caenorhabditis elegans*.
Identification and cloning of new cadmium-responsive genes by
differential display

JOURNAL Unpublished (1998)

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FEATURES Location/Qualifiers

source 1..255
/organism="Caenorhabditis elegans"
/strain="N2"
/db_xref="taxon:6239"
/clone="DDRT1"
/clone_lib="mRNA from cadmium-responsive gene"
/tissue_type="whole animal"
/dev_stage="mixed population"

BASE COUNT 113 a 25 c 51 g 66 t

ORIGIN

1 atcattcaag aaagctatta tcagaaaaca taaatgacat agatcaagt taaatcacat
61 atatataaag tggataaata tatatagta aacggataag gaaattaatt aatgaattt
121 gaaactggca gcgaaggatg aacagggaaa ggcacatgtt aaaataaag aatgtgtata
181 attcgtgaa gagttagta tgtaggtga tggcagccat gcagaatgag ccattgttcc
241 gaaaaaaaaaaaaa
//

LOCUS AF071358 433 bp mRNA EST 30-JUN-1998

DEFINITION AF071358 mRNA from cadmium-responsive gene *Caenorhabditis elegans*
cDNA clone DDRT17, mRNA sequence.

ACCESSION AF071358

NID g3265103

KEYWORDS EST.

SOURCE *Caenorhabditis elegans*.

ORGANISM *Caenorhabditis elegans*

Eukaryota; Metazoa; Nematoda; Secernentea; Rhabditia; Rhabditida;
Rhabditina; Rhabditoidea; Rhabditidae; Peloderinae; *Caenorhabditis*.

REFERENCE 1 (bases 1 to 433)

AUTHORS Freedman, J.H. and Liao, H.-C.

TITLE Cadmium-Regulated Genes from the Nematode *Caenorhabditis elegans*.
Identification and cloning of new cadmium-responsive genes by
differential display

JOURNAL Unpublished (1998)

COMMENT

Contact: Jonathan H. Freedman
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Inventor: FREEDMAN et al
SN 09/437,450/Sheet 39 of 43
Atty. Dkt.: 1579-315

Fig. 5A-35

FEATURES Location/Qualifiers
source 1..433
 /organism="Caenorhabditis elegans"
 /strain="N2"
 /db_xref="taxon:6239"
 /clone="DDRT17"
 /clone_lib="mRNA from cadmium-responsive gene"
 /tissue_type="whole animal"
 /dev_stage="mixed population"

BASE COUNT 149 a 63 c 83 g 138 t
ORIGIN

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1  tggactaag ggccaataac tgagctttg cacggcggca tcaatgataa agagaaacta
61  ttttgacgg ttaaaataac caaatttaca cggcgagtc aatcaaaaat tctcatctgg
121 aacagcaaag tacatcggag aattgctgga aggaagcact gatgaaacta aattaactgc
181 tggatgcata ggaaaaacgt caagattgac gtggagtgg agagaaggac tatgtttgga
241 tggttactaa gattttgtaa ctggtgacaa taaggacatc acttttctaa ctaacttaaa
301 ttcttttta ctcttttct tctgaattaa ttgtgttta aggccaattc tatgtttcag
361 aattattta cgtttgctt tcatgttta attgtaaaag taagcaattt ttccaccgta
421 aaaaaaaaa aaa
```

//

LOCUS AF071357 933 bp mRNA EST 30-JUN-1998
DEFINITION AF071357 mRNA from cadmium-responsive gene *Caenorhabditis elegans*
 cDNA clone DDRT16FC, mRNA sequence.

ACCESSION AF071357

NID g3265102

KEYWORDS EST.

SOURCE *Caenorhabditis elegans*.

ORGANISM *Caenorhabditis elegans*

Eukaryota; Metazoa; Nematoda; Secernentea; Rhabditia; Rhabditida;
Rhabditina; Rhabditoidea; Rhabditidae; Peloderinae; *Caenorhabditis*.

REFERENCE 1 (bases 1 to 933)

AUTHORS Freedman, J.H. and Liao, H.-C.

TITLE Cadmium-Regulated Genes from the Nematode *Caenorhabditis elegans*.
 Identification and cloning of new cadmium-responsive genes by
 differential display

JOURNAL Unpublished (1998)

COMMENT

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Email: jonf@duke.edu.

FEATURES Location/Qualifiers

source 1..933
 /organism="Caenorhabditis elegans"
 /strain="N2"
 /db_xref="taxon:6239"
 /clone="DDRT16FC"
 /clone_lib="mRNA from cadmium-responsive gene"
 /tissue_type="whole animal"
 /dev_stage="mixed population"

BASE COUNT 275 a 190 c 171 g 297 t
ORIGIN



Inventor: FREEDMAN et al
SN 09/437,450/Sheet 40 of 43
Atty. Dkt.: 1579-315

Fig. 5A-36

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1 catgcattt tttttttt ttttttta ctgtctcaag tatgttggat tcatgttga
61 ttattactgc tgcgtgttt ggagccgctg tcattactt gaaaaattc ttcactgtc
121 ctagcattaa accaaaacct gatattcaca aaaaagacta caaaaaggat gtagtctatc
181 tgtatcagat gaagagactc aagaactgtc cgaacttgc ccctttctgc atgaaaatcg
241 agattcttg tagaatcttc aagattcctt acgagattat cacatgcacc tctgaacgct
301 ctcggaatgg attggtccct ttcgttgaac tcaatggaga gcacattgct gattctgac
361 ttatcgaaat gcgcttgaga tcacattta aaattccgtc gcttccaact gagctggaaa
421 ctcaatctgt tgctctaagc aagtttcag atcaccattt gttcttcgta cttatagat
481 ttaaaattgc tgtcgacgaa ttctacaaa ccattatcga aataatcggg ctcccaacct
541 tctgaattt ccttctcatg cccctttga aggtataat cgggaaaaat gtctacaaca
601 aatgtcaggg agccattgga gatttgaat tgagtgcgct cgacgagatt cttcacagag
661 atttgcgaat cgtagagaac accttgccca agaaaaagtt tctttcggg gaggaatca
721 cggcggcgga tgcaacagtc ttcttcaat tggcaactgt ctattatcca ttccgcaatc
781 acatttcgga tgttctgaa aaggacttc caaagtatt ggagtactgt gaaagagttc
841 gtcatgaagt ttcccaaag gactttacta tgtgaattaa attgtcaaac tagtagtcag
901 atcaataaaa ttctacgtgg caaaaaaaaa aaa
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//

LOCUS AF071356 238 bp mRNA EST 30-JUN-1998
DEFINITION AF071356 mRNA from cadmium-responsive gene *Caenorhabditis elegans*
cDNA clone DDRT16, mRNA sequence.

ACCESSION AF071356

NID g3265101

KEYWORDS EST.

SOURCE *Caenorhabditis elegans*.

ORGANISM *Caenorhabditis elegans*

Eukaryota; Metazoa; Nematoda; Secernentea; Rhabditia; Rhabditida;
Rhabditina; Rhabditoidea; Rhabditidae; Peloderinae; *Caenorhabditis*.

REFERENCE 1 (bases 1 to 238)

AUTHORS Freedman, J.H. and Liao, H.-C.

TITLE Cadmium-Regulated Genes from the Nematode *Caenorhabditis elegans*.
Identification and cloning of new cadmium-responsive genes by
differential display

JOURNAL Unpublished (1998)

COMMENT

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Email: jonf@duke.edu.

FEATURES Location/Qualifiers

source 1..238
/organism="Caenorhabditis elegans"
/strain="N2"
/db_xref="taxon:6239"
/clone="DDRT16"
/clone_lib="mRNA from cadmium-responsive gene"
/tissue_type="whole animal"
/dev_stage="mixed population"

BASE COUNT 77 a 42 c 45 g 74 t

ORIGIN

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1 tttttttt ttgggagga aatcacggcg gcggatgcaa cagtctctc tcaattggca
61 actgtctatt atccattccg caatcacatt tcggatgttc tcgaaaagga ctcccaaag
121 ttattggagt actgtgaaag agttcgtcat gaagttacc caaaggactt tactatgtga
```



Inventor: FREEDMAN et al
SN 09/437,450/Sheet 41 of 43
Atty. Dkt.: 1579-315

Fig. 5A-37

181 attaaattgt caaactagta gtcagatcaa taaaattcta cgtggcaaaa aaaaaaaa
//

LOCUS AF071355 248 bp mRNA EST 30-JUN-1998
DEFINITION AF071355 mRNA from cadmium-responsive gene *Caenorhabditis elegans*
cDNA clone DDRT15, mRNA sequence.

ACCESSION AF071355

NID g3265100

KEYWORDS EST.

SOURCE *Caenorhabditis elegans*.

ORGANISM *Caenorhabditis elegans*

Eukaryota; Metazoa; Nematoda; Secernentea; Rhabditia; Rhabditida;
Rhabditina; Rhabditoidea; Rhabditidae; Peloderinae; *Caenorhabditis*.

REFERENCE 1 (bases 1 to 248)

AUTHORS Freedman, J.H. and Liao, H.-C.

TITLE Cadmium-Regulated Genes from the Nematode *Caenorhabditis elegans*.
Identification and cloning of new cadmium-responsive genes by
differential display

JOURNAL Unpublished (1998)

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FEATURES Location/Qualifiers

source 1..248

/organism="Caenorhabditis elegans"

/strain="N2"

/db_xref="taxon:6239"

/clone="DDRT15"

/clone_lib="mRNA from cadmium-responsive gene"

/tissue_type="whole animal"

/dev_stage="mixed population"

BASE COUNT 67 a 46 c 31 g 104 t

ORIGIN

1 tttttttt ttgcgatgt tgtaacta atattatta attttctta attttcttg

61 ttaagttgt atttatagg ttttgagatt ttttgctg taatttgca actgtgattc

121 atgtatgtac tatatgaacc gaaacccct cccgtcatc acaacagta gtaaacatt

181 ttaatccat atttctcatt cccaacactc ttacagggtt tgcatacga gcagcagtc

241 aaacacaa

//

LOCUS AF071354 226 bp mRNA EST 30-JUN-1998

DEFINITION AF071354 mRNA from cadmium-responsive gene *Caenorhabditis elegans*
cDNA clone DDRT12, mRNA sequence.

ACCESSION AF071354

NID g3265099

KEYWORDS EST.

SOURCE *Caenorhabditis elegans*.

ORGANISM *Caenorhabditis elegans*

Eukaryota; Metazoa; Nematoda; Secernentea; Rhabditia; Rhabditida;
Rhabditina; Rhabditoidea; Rhabditidae; Peloderinae; *Caenorhabditis*.

REFERENCE 1 (bases 1 to 226)



Inventor: FREEDMAN et al
SN 09/437,450/Sheet 42 of 43
Atty. Dkt.: 1579-315

Fig. 5A-38

AUTHORS Freedman, J.H. and Liao, H.-C.

TITLE Cadmium-Regulated Genes from the Nematode *Caenorhabditis elegans*.
Identification and cloning of new cadmium-responsive genes by
differential display

JOURNAL Unpublished (1998)

COMMENT

Contact: Jonathan H. Freedman
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Email: jonf@duke.edu.

FEATURES Location/Qualifiers

source 1..226
/organism="Caenorhabditis elegans"
/strain="N2"
/db_xref="taxon:6239"
/clone="DDRT12"
/clone_lib="mRNA from cadmium-responsive gene"
/tissue_type="whole animal"
/dev_stage="mixed population"

BASE COUNT 68 a 38 c 35 g 85 t

ORIGIN

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1 tttttttt ttttgaaca aagaactgag cactctatgg ttatcaagt ctatatgtat
61 ccgtgatgcc tactgtatcg tacatccatc tcgatcgtaa tgcattattg atcatgagtt
121 cccaaaggtc ttaatctga caaagggtgca atagatatat atccttattt ggcactatat
181 atatgttcag aattatgact gatcgataca tatgatcaaa gttaca
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//

LOCUS AF071353 212 bp mRNA EST 30-JUN-1998

DEFINITION AF071353 mRNA from cadmium-responsive gene *Caenorhabditis elegans*
cDNA clone DDRT10, mRNA sequence.

ACCESSION AF071353

NID g3265098

KEYWORDS EST.

SOURCE *Caenorhabditis elegans*.

ORGANISM *Caenorhabditis elegans*

Eukaryota; Metazoa; Nematoda; Secernentea; Rhabditia; Rhabditida;
Rhabditina; Rhabditoidea; Rhabditidae; Peloderinae; *Caenorhabditis*.

REFERENCE 1 (bases 1 to 212)

AUTHORS Freedman, J.H. and Liao, H.-C.

TITLE Cadmium-Regulated Genes from the Nematode *Caenorhabditis elegans*.
Identification and cloning of new cadmium-responsive genes by
differential display

JOURNAL Unpublished (1998)

COMMENT

Contact: Jonathan H. Freedman
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FEATURES Location/Qualifiers

source 1..212
/organism="Caenorhabditis elegans"
/strain="N2"



Inventor: FREEDMAN et al
SN 09/437,450/Sheet 43 of 43
Atty. Dkt.: 1579-315

Fig. 5A-39

/db_xref="taxon:6239"
/clone="DDRT10"
/clone_lib="mRNA from cadmium-responsive gene"
/tissue_type="whole animal"
/dev_stage="mixed population"

BASE COUNT 68 a 35 c 34 g 75 t

ORIGIN

1 ttcgatacag gaactacatt tacatctgtt tcaacatac aacaatacat aacatactca
61 atccttcagg ctctgaagga ttttgagtgc gatatactgt aacaagctcg ggaaacataa
121 gtacattttt tggagctatc ttttatgtt gcgcttttct tttgtctctt tgaatgagtt
181 ttgaaatgaa ttgtctgtgc aaaaaaaaaa aa

//